

IN THE UNITED STATES DISTRICT COURT  
FOR THE SOUTHERN DISTRICT OF NEW YORK

JUDGE HOLWELL

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GLAXO GROUP LIMITED

Plaintiff,

v.

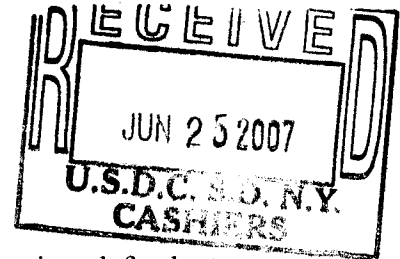
CYPRESS PHARMACEUTICAL, INC.

Defendant.  
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**07 CIV 6012**

Civil Action No.

**COMPLAINT FOR PATENT  
INFRINGEMENT**



Plaintiff Glaxo Group Limited for its Complaint against defendant

Cypress Pharmaceutical, Inc. avers and alleges as follows:

**THE PARTIES**

1. Plaintiff Glaxo Group Limited ("Glaxo") is a company organized and existing under the laws of England and Wales and having a registered office at Glaxo Wellcome House, Berkeley Avenue, Greenford, Middlesex, UB6 ONN, Middlesex, England.

2. Defendant Cypress Pharmaceutical, Inc. ("Cypress") is a Mississippi corporation that applied for, and was granted, authorization to do business in New York. A true and correct copy of Cypress' "Entity Information" from the New York Department of State website is attached as Exhibit A.

**JURISDICTION AND VENUE**

3. This is a civil action for patent infringement arising under the patent laws of the United States, 35 U.S.C. §§ 271 *et seq.* and 21 U.S.C. § 355.

4. Jurisdiction and venue are proper in this judicial district pursuant to 28 U.S.C. §§ 1331, 1338(a) and 1391(c).

5. Personal jurisdiction over Cypress is available in this judicial district. Cypress selected New York County on its “Application for authority” to do business in New York as the “county...in which its office is to be located.” Cypress designated the New York Secretary of State as its “agent upon whom process against it may be served.” New York Business Corporation Law §§ 1304(a)(5) and (a)(6), respectively. New York County (Manhattan) is within the Southern District of New York.

**PATENT INFRINGEMENT PURSUANT TO 35 U.S.C. § 271(e)(2)**

6. On November 26, 1991, United States Patent No. 5,068,249 (“the ‘249 patent”) entitled “Aqueous Ranitidine Compositions Stabilized with Ethanol” was duly and legally issued. Since that date, Glaxo Group Limited has been and remains the assignee and owner of the ‘249 patent.

7. The ‘249 patent covers a pharmaceutical composition which is an aqueous formulation for oral administration of an effective amount of ranitidine and/or one or more physiologically acceptable salts thereof, said formulation comprising a stabilizing effective amount of ethanol and having a pH in the range of 6.5 – 7.5. The ‘249 patent expires on November 26, 2008. A true and correct copy of the ‘249 patent is attached to this Complaint as Exhibit B.

8. SmithKline Beecham Corporation is the holder of the approved New Drug Application (“NDA”) No. 19-675 under Section 505(b) of the Federal Food, Drug and Cosmetic Act (hereinafter the “Act”), codified at 21 U.S.C. § 355(b), for

Ranitidine Hydrochloride Oral Syrup, 15mg/ml, (the “approved drug product”), which is covered by the ‘249 patent.

9. Glaxo has qualified for pediatric exclusivity for its approved drug product. *See* Section 505A of the Act, 21 U.S.C. § 355a. The grant of pediatric exclusivity by the United States Food and Drug Administration (“FDA”) attaches 6 months of exclusivity to the patent protection already afforded by the ‘249 patent to Glaxo’s approved drug product. During this additional 6 month period, or until May 26, 2009, the FDA may not make effective the approval of an abbreviated new drug application “for which a certification has been submitted under subsection ... (j)(2)(A)(vii) (IV) of section 505” of the Act, also known as a paragraph IV certification. Section 505A (b)(2)(B) of the Act, 21 U.S.C. § 355a (b)(2)(B).

10. Cypress has filed or has caused to be filed with the FDA Abbreviated New Drug Application No. 78-779, (the “ANDA”), requesting FDA approval to market a generic version of the approved drug product prior to the expiration of Glaxo’s ‘249 patent and attendant pediatric exclusivity. The manufacture, use or sale of Cypress’ generic Ranitidine Oral Syrup, 15 mg/ml, prior to the expiration of the ‘249 patent and attendant pediatric exclusivity, would be an infringement of the ‘249 patent claims.

11. The Cypress ANDA submission contains a paragraph IV certification under Section 505(j)(2)(A)(vii)(IV) of the Act (21 U.S.C. § 355(j)(2)(A)(vii)(IV)). FDA approval of the ANDA cannot be made effective until at least May 26, 2009, 6 months after the ‘249 patent expires, because Glaxo was granted pediatric exclusivity. Section 505A (b)(2)(B) of the Act, 21 U.S.C. § 355a (a)(2)(B).

12. On or about May 14, 2007, Glaxo received from Cypress the statutorily required written notice of Cypress' ANDA submission requesting FDA marketing approval to manufacture, use or sell Ranitidine Oral Syrup, 15 mg/ml, prior to the expiration of the '249 patent. *See* Section 505(j)(2)(B)(ii) of the Act, 21 U.S.C. § 355 (j)(2)(B)(ii); *see also* 21 CFR § 314.95(c). In its written notice, Cypress alleges that "no valid claim of the '249 patent will be infringed" by its proposed generic version of Glaxo's approved drug product, but Cypress does not provide a factual and legal basis for any non-infringement allegation.

13. Cypress also ignored Glaxo's May 16, May 29 and June 7, 2007 requests for information regarding the formulation and composition of Cypress' proposed generic version of Glaxo's approved drug product. Consequently, Cypress has not provided any information to Glaxo to support any non-infringement allegation.

14. Cypress, by filing its ANDA and requesting FDA marketing approval for generic Ranitidine Oral Syrup, 15 mg/ml, prior to expiration of the '249 patent and attendant pediatric exclusivity period, has infringed the claims of the '249 patent under 35 U.S.C. § 271(e)(2), and such infringement will continue unless enjoined by this Court.

#### **PRAYER FOR RELIEF**

WHEREFORE, Plaintiff Glaxo prays for a Judgment:

- A. Finding that defendant has infringed the claims of United States Patent No. 5,068,249;
- B. Ordering that the effective date of any approval of defendant's Abbreviated New Drug Application No. 78-779 under Section 505(j) of the Federal Food,

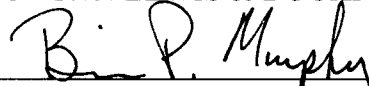
Drug and Cosmetic Act, 21 U.S.C. § 355(j), for Ranitidine Oral Syrup, 15 mg/ml, and its use be not earlier than the expiration date of United States Patent No. 5,068,249, including any additional period of FDA-authorized exclusivity;

C. Awarding plaintiff preliminary and final injunctions enjoining defendant and its officers, agents, servants, employees and privies from infringement of United States Patent No. 5,068,249; and

D. Awarding plaintiff its costs, expenses, and reasonable attorneys' fees and such other and further relief as this Court may deem just and proper.

Dated: June 25, 2007

MORGAN LEWIS & BOCKIUS LLP

A handwritten signature in black ink, appearing to read "B. P. Murphy", is written over a horizontal line.

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*Attorneys for Plaintiff*

# NYS Department of State

## Division of Corporations

### Entity Information

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**Selected Entity Name:** CYPRESS PHARMACEUTICAL, INC.

**Selected Entity Status Information**

**Current Entity Name:** CYPRESS PHARMACEUTICAL, INC.

**Initial DOS Filing Date:** JUNE 28, 2004

**County:** NEW YORK

**Jurisdiction:** MISSISSIPPI

**Entity Type:** FOREIGN BUSINESS CORPORATION

**Current Entity Status:** ACTIVE

**Selected Entity Address Information**

**DOS Process (Address to which DOS will mail process if accepted on behalf of the entity)**

CYPRESS PHARMACEUTICAL, INC.

135 INDUSTRIAL BLVD.

MADISON, MISSISSIPPI, 39110

**Chairman or Chief Executive Officer**

MAX DRAUGHN

135 INDUSTRIAL BLVD

MADISON, MISSISSIPPI, 39110

**Principal Executive Office**

MAX DRAUGHN

152 OLD FARM RD

MADISON, MISSISSIPPI, 39110

**Registered Agent**

NONE

NOTE: New York State does not issue organizational identification numbers.

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**United States Patent** [19][11] **Patent Number:** **5,068,249****Long**[45] **Date of Patent:** **Nov. 26, 1991**[54] **AQUEOUS RANITIDINE COMPOSITIONS  
STABILIZED WITH ETHANOL**[75] **Inventor:** **David R. Long, Royston, England**[73] **Assignee:** **Glaxo Group Limited, London,  
England**[21] **Appl. No.:** **494,804**[22] **Filed:** **Mar. 14, 1990****Related U.S. Application Data**

[63] Continuation of Ser. No. 344,620, Apr. 28, 1989, abandoned, which is a continuation of Ser. No. 131,442, Dec. 11, 1987, abandoned.

[30] **Foreign Application Priority Data**

Dec. 12, 1986 [GB] United Kingdom ..... 86 29781

[51] **Int. Cl.<sup>5</sup>** ..... **A61K 31/34**[52] **U.S. Cl.** ..... **514/471**[58] **Field of Search** ..... **514/461, 471**[56] **References Cited****FOREIGN PATENT DOCUMENTS**2547727 12/1984 France .  
2120938 5/1983 United Kingdom .  
2142820 1/1985 United Kingdom .**OTHER PUBLICATIONS**

Chem. Abst. (97)-61014G (1982).

Chem. Abst. (104)-102280Z (1986).

*Primary Examiner*—Frederick E. Waddell*Assistant Examiner*—Diane Gardner*Attorney, Agent, or Firm*—Bacon & Thomas[57] **ABSTRACT**

The stability of aqueous formulations of ranitidine or a physiologically acceptable salt thereof is enhanced by the addition of ethanol.

**12 Claims, No Drawings**

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# **AQUEOUS RANITIDINE COMPOSITIONS STABILIZED WITH ETHANOL**

This application is a continuation of application Ser. No. 07/344,620, filed Apr. 28, 1989, now abandoned, which is a continuation of Ser. No. 07/131,442, filed Dec. 11, 1987, now abandoned.

The present invention relates to a pharmaceutical composition containing as active ingredient the histamine H<sub>2</sub> antagonist ranitidine.

Ranitidine, [N-[2-[[[5-(dimethylamino)methyl-2-furanyl]methyl]thio]ethyl]-N'-methyl-2-nitro-1,1-ethenediamine, and its physiologically acceptable salts are described in British Patent Specification No. 1565966. In that specification there is reference to liquid formulations for oral and parenteral administrations and there is a description of an aqueous based formulation for intravenous use and another of an oral syrup. Both of these formulations contained sufficient hydrochloric acid to achieve a pH of 5.0 and the syrups also contained Sorbitol solution BPC and a flavour as required.

British Patent Application No. GB 2142820A describes aqueous based formulations containing ranitidine and/or one or more of its physiologically acceptable salts thereof having a pH within the range 6.5-7.5. In that specification there is reference to liquid formulations for oral and parenteral administration and there are examples of aqueous formulations for intravenous and oral use. These formulations contain ranitidine hydrochloride and are buffered to a pH of approximately 7 and for intravenous administration the formulations also contain phenol or sodium chloride. For oral administration the formulation also contains hydroxypropylmethyl cellulose as a viscosity enhancing agent, a preservative (parabens), a sweetening agent and a flavour. These compositions have a significantly greater shelf-life over those in British Patent No. 1565966.

We have now surprisingly found that the stability of ranitidine in aqueous based formulations and more particularly aqueous based formulations for oral administration may be substantially enhanced by the addition of ethanol to the formulation.

Thus the present invention provides a pharmaceutical composition which is an aqueous formulation of ranitidine and/or one or more physiologically acceptable salts thereof also containing ethanol. The aqueous formulation is prepared using ingredients of a purity such that it is suitable for administration to patients and will in general contain at least one conventional pharmaceutical excipient in addition to the ethanol and ranitidine and/or physiologically acceptable salts thereof.

The amount of ethanol present in the formulation is such that the resulting formulation has the enhanced stability. Preferably the amount of ethanol in the composition on a weight/volume basis of the complete formulation, is within the range 2.5% to 10%, and more particularly is between 5 to 10% w/v, more especially 7-8% w/v.

Preferred compositions according to the invention are those in which the pH of the aqueous formulation is within the range 6.5 to 7.5, particularly 6.8 to 7.4 and more especially 7 to 7.3. The required pH of the formulation is preferably obtained by the use of suitable buffer salts for example, potassium dihydrogen orthophosphate and disodium hydrogen orthophosphate or citric acid and disodium hydrogen orthophosphate.

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A preferred embodiment of the invention is an aqueous formulation for oral administration. Such a formulation may comprise ranitidine and/or one or more of its physiologically acceptable salts dissolved in water, ethanol, a preservative and a viscosity enhancing agent. Preferably the required pH of the formulation is obtained by the use of appropriate buffer salts. Optionally the composition may also contain other conventional excipients such as a sweetener, a flavour and/or flavouring aids.

Examples of suitable preservatives include one or more alkyl hydroxybenzoates such as methyl, ethyl, propyl and/or butyl hydroxybenzoates.

Examples of suitable viscosity enhancing agents include Xanthan gum, sorbitol glycerol, sucrose or a cellulose derivative such as carboxymethylcellulose or a salt thereof of a C<sub>1-4</sub> alkyl and/or a hydroxy-C<sub>2-4</sub> alkyl ether of cellulose such as methylcellulose, ethylcellulose, hydroxyethylcellulose, hydroxypropylcellulose, hydroxyethylmethylcellulose and hydroxypropylmethylcellulose.

Examples of suitable sweeteners include saccharin sodium, sodium cyclamate, sorbitol and sucrose.

Examples of suitable flavouring agents include 'mint' flavours such as peppermint flavouring agents.

The concentration of ranitidine in the oral formulation, expressed as free base, is conveniently within the range 20-400 mg per 10 ml, for example 20-200 mg per 10 ml, more particularly 150 mg per 10 ml dose.

The amount of ethanol in the formulation for oral administration, expressed as a percentage of the complete formulation on a weight/volume basis, is preferably within the range 2.5 to 10%, and more particularly between 5 to 10%, more especially 7-8%.

The amount of viscosity enhancing agent in the formulation will preferably be sufficient to give a solution with a viscosity in the range of 10 to 100 centipoises.

The aqueous formulations for oral administration are conveniently prepared by mixing an aqueous solution of ranitidine and/or one or more of its physiologically acceptable salts together with ethanol and the excipients, with aqueous solution or dispersion of the viscosity enhancing agent.

The aqueous formulations according to the invention are preferably prepared using ranitidine in the form of its hydrochloride salt.

An illustrative example of a formulation according to the invention is as follows. In this example the relative proportions of ranitidine hydrochloride and the buffer salts are such that the formulation has a pH of approximately 7.

**Ranitidine oral liquid formulation (150 mg/10 ml)  
expressed as free base**

	% w/v
Ranitidine hydrochloride	1.68
Ethanol	7.5
Potassium dihydrogen orthophosphate	0.095
Disodium hydrogen orthophosphate anhydrous	0.350
Hydroxypropylmethylcellulose	qs
Preservative	qs
Sweetening agents	qs
Flavour	qs
Purified water BP to	100 ml

I claim:

1. A pharmaceutical composition which is an aqueous formulation for oral administration of an effective



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amount of ranitidine and/or one or more physiologically acceptable salts thereof, said formulation comprising a stabilizing effective amount of ethanol and said composition having a pH in the range of 6.5-7.5.

2. A pharmaceutical composition according to claim 1 containing 2.5% to 10% weight/volume ethanol based on the complete formulation.

3. A pharmaceutical composition according to claim 1 containing 7% to 8% weight/volume ethanol based on the complete formulation.

4. A pharmaceutical composition according to claim 1 having a pH in the range 6.8 to 7.4.

5. A pharmaceutical composition according to claim 1 having a pH in the range 7.0 to 7.3.

6. A pharmaceutical composition according to claim 1 wherein said pH is obtained by the use of buffer salts.

7. A pharmaceutical composition according to claim 1 prepared using ranitidine in the form of the hydrochloride salt.

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8. A pharmaceutical composition as claimed in claim 1, wherein the effective amount is 20-400 mg ranitidine per 10 ml dose expressed as free base.

9. A pharmaceutical composition as claimed in claim 1, wherein the effective amount is 20-200 mg ranitidine per 10 ml dose expressed as free base.

10. A pharmaceutical composition as claimed in claim 1, wherein the effective amount is 150 mg ranitidine per 10 ml dose expressed as free base.

11. A pharmaceutical composition which is an aqueous formulation of ranitidine suitable for oral administration containing 150 mg ranitidine per 10 ml dose expressed as free base, said formulation having a pH in the range 7.0 to 7.3 and also containing 7% to 8% weight/volume ethanol based on the complete formulation.

12. A pharmaceutical composition according to claim 11 wherein said pH is obtained by the use of buffer salts.

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